CLAIMS

What is claimed is:

1. A method of producing at least one vector encoding an array of antigens for expression in an antigen-presenting cell comprising:

(a) comparing first nucleic acid sequences expressed by a target cell population with second nucleic acid sequences expressed by a non-target cell population;

(b) selecting nucleic acid sequences preferentially expressed by the target cell population relative to the non-target cell population; and

(c) introducing the selected nucleic acid sequences into at least one vector capable of directing expression of the selected nucleic acid sequences in an antigen-presenting cell.

2. The method of claim 1, wherein the antigen-presenting cell is a dendritic cell, macrophage, B cell, monocyte or fibrocyte.

3. The method of claim 1, wherein the vector further comprises an antigen-presenting cell targeting element.

4. The method of claim 1, wherein the first and second nucleic acid sequences are of the same tissue of origin.

5. The method of claim 1, wherein the selected nucleic acid sequences comprise at least 5 different nucleic acid sequences.

6. The method of claim 1, wherein the selected nucleic acid sequences comprise at least 7 different nucleic acid sequences.

7. The method of claim 1, wherein the selected nucleic acid sequences comprise at least 9 different nucleic acid sequences.

8. The method of claim 1, wherein the vector further comprises a nucleic acid sequence encoding an immunomodulatory cofactor.

9. The method of claim 8, wherein the immunomodulatory cofactor is IL-2, IL-3, IL-8, OKT3, α-interferon, γ-interferon, or MIP-1α.

10. The method of claim 1, wherein the vector further encodes at least one selectable marker.

11. The method of claim 10, wherein the selectable marker is PLAP, GFP or neomycin resistance.

12. The method of claim 1, wherein the target cell is a cancer cell.

13. The method of claim 1, wherein the target cell is a virus, a bacterium or a parasite.

14. A composition comprising at least one vector produced by the method of claim 1.

15. The composition of claim 14, wherein the vector further comprises an antigen-presenting cell targeting element.

16. The composition of claim 14, further comprising an antigen-presenting cell.

17. A method of producing an antigen-presenting cell that presents an array of antigens comprising:

(a) comparing first nucleic acid sequences expressed by a target cell population with second nucleic acid sequences expressed by a non-target cell population;

(b) selecting at least one nucleic acid sequence preferentially expressed by the target cell population relative to the non-target cell population; and

(c) genetically modifying an antigen-presenting cell to express the selected nucleic acid sequences.

18. The method of claim 17, wherein the antigen-presenting cell is a dendritic cell, macrophage, B cell, monocyte or fibrocyte.

19. The method of claim 17, wherein the first and second nucleic acid sequences are of the same tissue of origin.

20. The method of claim 17, wherein the selected nucleic acid sequences comprise at least 5 different nucleic acid sequences.

21. The method of claim 17, wherein the selected nucleic acid sequences comprise at least 7 different nucleic acid sequences.

22. The method of claim 17, wherein the selected nucleic acid sequences comprise at least 9 different nucleic acid sequences.

23. The method of claim 1, wherein the selected nucleic acid sequence further encodes at least one selectable marker.

24. The method of claim 23, wherein the selectable marker is PLAP, GFP or neomycin resistance.

25. The method of claim 17, wherein the target cell is a cancer cell.

26. The method of claim 17, wherein the target cell is a virus, a bacterium or a parasite.

27. An antigen-presenting cell produced by the method of any one of claims 17-26.

28. A method of activating T cells comprising contacting a T cell with an antigen-presenting cell of claim 27.

29. The method of claim 28, wherein the T cell is a cytotoxic T lymphocyte.

30. A method of inducing a toleragenic response comprising contacting a T cell with an antigen-presenting cell of claim 27.

31. The method of claim 30, wherein the T cell is a T_{H2} cell.

32. The method of claim 28 or 30, wherein the contacting occurs *in vivo*.

33. The method of claim 28 or 30, wherein the contacting occurs *ex vivo*.

34. The method of claim 32 or 33, wherein the activating is in the presence of an immunomodulatory cofactor.

35. The method of claim 34, wherein the immunomodulatory cofactor is IL-2, IL-3, IL-8, OKT3, α-interferon, γ-interferon, or MIP-1α.

36. A method of activating T cells *in vivo* comprising administering the composition of claim 14 to a subject.

37. A method of killing a target cell *in vivo* comprising administering the composition of claim 14 or the antigen-presenting cell of claim 27 to a subject.

38. A method of preventing infection comprising administering the composition of claim 14 or the antigen-presenting cell of claim 27 to a subject.

39. A method of treating cancer comprising administering to a subject the composition of claim 14 or the antigen-presenting cell of claim 27, wherein the target cell is a cancer cell.

40. A method of treating an infection comprising administering to a subject the composition of claim 14 or the antigen-presenting cell of claim 27, wherein the target cell is an infectious agent.